Claims (before amendment under PCT Art. 19)

1.   A method for generating a stereographic image comprising:

a calculating step of calculating Z-values of pixels on the basis of image data of pixels, the pixels forming an image, each Z-value being assigned to a pixel, and each Z-value representing a depth of an object corresponding to the pixel;

an adjusting step of adjusting a Z-value of a target pixel obtained in said calculating step using a Z-value of a pixel other than the target pixel; and

a generating step of determining an amount of displacement of a target pixel on the basis of an adjusted Z-value of the target pixel, and displacing the target pixel horizontally by the determined amount, to generate images for the right and the left eyes.

2.   The method of Claim 1, wherein in said calculating step a Z-value of a target pixel is obtained by adding predetermined weights to color components of image data of the target pixel.

3.   The method of Claim 2, wherein the weights are determined based on the ratio of cone cells sensitive of R, G, and B, respectively, which cones exist in a retina of a human eye.

4.   The method of Claim 1, wherein in said adjusting step Z-values of pixels are adjusted so that a single step available for a Z-value of a pixel corresponding to an object located backward in an original image express deeper depth than a single step available for a Z-value of a pixel corresponding to an object located forward in the original image.

5. The method of Claim 1, wherein in said adjusting step:

tendency of Z-values of pixels in the image is analyzed by comparing a Z-value of a pixel within an area with a Z-value of a pixel within another area; and

when a result of the analysis agrees with a predetermined condition, a quantitative relation between the amount of displacement of the target pixel and the Z-value of the target pixel is reversed in said generating step.

6. The method of Claim 1, wherein in said adjusting step:

an average of Z-values of pixels within an area which includes a target pixel is obtained; and

a Z-value of the target pixel is replaced by the obtained average.

7. The method of Claim 1, wherein in said adjusting step:

a distribution of the Z-values of all pixels in the image and an average of all pixels in the image are obtained; and

deviation of the distribution is corrected using the obtained average.

8. The method of Claim 1, wherein in said adjusting step:

at least one object in the image represented by the image data is identified referring to Z-values of pixels calculated in said calculating step; and

a Z-value of the target pixel is adjusted on the basis of a Z-value of a pixel located within an area corresponding to the identified object.

9. The method of Claim 1, wherein in said adjusting step a step size of quantization of the Z-value is determined based on a value of a parameter specified by a user.

10. The method of Claim 1, wherein in said adjusting step either an upper limit or a lower limit of the calculated Z-value is determined based on a value of a parameter specified by a user.

5   11. The method of Claim 11, further comprising a step of obtaining moving images comprised of a plurality of images, and wherein a stereographic image is generated from each image, to generate stereographic images corresponding to the moving images in real time.

10   12. A stereographic image generating apparatus for generating a stereographic image comprising:

a calculating means for calculating Z-values of pixels on the basis of image data of pixels, the pixels forming an image, each Z-value being assigned to a pixel, and each Z-value representing a depth of an object

15   corresponding to the pixel;

an adjusting means for adjusting a Z-value of a target pixel obtained in said calculating means using a Z-value of a pixel other than the target pixel; and

a generating means for determining an amount of displacement of a

20   target pixel on the basis of an adjusted Z-value of the target pixel, and displacing the target pixel horizontally by the determined amount, to generate images for the right and the left eyes.

13. The apparatus of Claim 11, further comprising an obtaining means

25   for obtaining from a user a parameter used in said adjusting means.

14. The apparatus of Claim 12, wherein the parameter represents either an upper limit or a lower limit of the Z-value.

15. The apparatus of Claim 12, wherein the parameter represents a step size of quantization of the Z-value.

16. The apparatus of Claim 12, further comprising:

5   storing means for storing image data for the right and the left eyes; and

displaying means for displaying an image represented by the image data stored in said storing means in compliance with a predetermined scheme.

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17. A computer program product for causing a computer to function as:

a calculating means for calculating Z-values of pixels on the basis of image data of pixels, the pixels forming an image, each Z-value being assigned to a pixel, and each Z-value representing a depth of an object

15 corresponding to the pixel;

an adjusting means for adjusting a Z-value of a target pixel obtained in said calculating means using a Z-value of a pixel other than the target pixel; and

a generating means for determining an amount of displacement of a

20 target pixel on the basis of an adjusted Z-value of the target pixel, and displacing the target pixel horizontally by the determined amount, to generate images for the right and the left eyes.

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